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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 10/678,718	Applicant(s) GAGE, STACEY M.	
	Examiner Juan C. Ochoa	Art Unit 2123	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/9/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1–96 are presented for examination.

Drawings

2. The drawings are objected to because of the following informalities:

3. As to Figure 4B, logic box 420 includes the misspelled term "turdulence".

4. Appropriate correction is required.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because:

6. As to Figure 2D, it includes the following reference character(s) not mentioned in the description: 240.

7. As to Figure 4B, reference character "420" has been used to designate both "the graphical user interface" and "a button". "A button" should be 421, as noted in the specification.

8. As to Figure 4E, page 20, 1st paragraph, line 6 of the specification refers to "440" and not reference character 450 as labeled in Figure .

9. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

10. Claims 1, 28, 31, 41, 63, and 95 are objected to because of the following informalities:

11. Claim 1 line 2 includes the miss conjugated term "component <u>models</u>". Examiner interprets as "component <u>model</u>" for examination purposes.

12. Claims 28, 41, and 63 refer to the term "underlying". Term may raise indefiniteness issues. Examiner found in the dictionary several meanings for "underlying".

13. Claim 31 uses the acronym or variable "COESA", the first use of an acronym or variable in a claim should be defined to avoid any possible indefiniteness issues.

14. Claim 95 line 2 includes the miss conjugated term "to change an <u>equations</u> of motion". Examiner interprets as "to change an <u>equation</u> of motion" for examination purposes.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1–24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. As to claims 1 and 13, the limitation "in a computer-based modeling system, a method" in line 1 of the claim renders the claim indefinite because it is unclear whether the claimed invention is directed to method or a system. See MPEP § 2173.05(d).

18. As to claim 8, it recites the limitation "wherein after the second component is selected in the user interface, the second component model". There is insufficient antecedent basis for this limitation in the claim. Parent claim calls for "a first component" and "a first component model", but not a "second component" nor a "second component model".

19. Dependent claims inherit the defect of the claim from which they depend.

Claim Rejections - 35 USC § 101

20. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

21. Claims 1–72 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

22. Specifically, claims 1, 13, 25, 38, and 60 do not produce a useful, concrete and tangible result.

23. Specifically, claims 25, 38, and 60 recite software limitations and therefore the claims are directed to software per se, which are considered non-statutory subject matter.

24. Dependent claims inherit the defect of the claim from which they depend.

Claim Rejections - 35 USC § 102

25. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

26. Claims 1, 2, 4–14, 16–24, 38–41, 54–72, and 80–96 are rejected under 35 U.S.C. 102(a) as being anticipated by AeroSim Blockset User's Guide, (AeroSim hereinafter).

27. As to claim 1, AeroSim discloses an in a computer-based modeling system, a method for modeling a target system that includes at least a component model as a portion of a model of the target system, the method comprising: providing a first icon to the component model of the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); presenting a user interface in response to an action taken by a user selecting the first icon (see page 32, 4th paragraph), and selecting a first component model provided in the user interface so that the icon represents at least a portion of the component model, wherein the at least a portion of the component model is incorporated into the model of the target system through the icon (see page 41, 2nd paragraph).

28. As to claim 2, AeroSim discloses a method further comprising: switching the first icon to represent a second component model by selecting the second component model in the user interface (see "library" in page 3, col. 2, last paragraph, lines 1–3).

29. As to claim 4, AeroSim discloses a method wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model (see page 65).

30. As to claim 5, AeroSim discloses a method of claim wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model (see "current mass of the fuel in the tank" in page 177, col. 2, line 1).

31. As to claim 6, AeroSim discloses a method of claim wherein the user interface includes an option that provides users with multiple component models for the users to select one of the multiple component models (see page 41, 2nd paragraph).

32. As to claim 7, AeroSim discloses a method wherein component models provided as options of the user interface may be extended by users (see page 32, 1st and 2nd paragraphs).

33. As to claim 8, AeroSim discloses a method wherein after the second component is selected in the user interface, the second component model is incorporated into the model of the target system through the first icon (see page 32, 4th paragraph).

34. As to claim 9, AeroSim discloses a method wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model (see "customized" in page 26, lines 1–4).

35. As to claim 10, AeroSim discloses a method wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model (see "customized" in page 26, lines 1–4; page 35, col. 2, next to last paragraph; and "which specifies what parameters of the flight dynamics model the program will output" in page 36, col. 1, OUTPUT bullet).

36. As to claim 11, AeroSim discloses a method wherein the first icon represents one of the first component model and the second component model depending on users' selection of the first component model and the second component model (see "we will specify the aircraft parameter file" in page 32, 4th paragraph).

37. As to claim 12, AeroSim discloses a method wherein the first component model is switched to the second component model without replacing the first icon by a second icon representing the second component model (see page 32, 4th paragraph).

38. As to claim 13, AeroSim discloses a computer-based modeling system, a method for modeling a target system that includes at least a component models as a portion of a model of the target system, the method comprising: providing a first icon to the component model of the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); presenting a user interface in response to an action taken by a user selecting the first icon (see page 32, 4th paragraph), and selecting a first component model provided in the user interface so that the icon represents the first component model after a sequence of modifications to the component model, wherein the component model is incorporated into the model of the target system through the icon (see page 41, 2nd paragraph).

39. As to claim 14, AeroSim discloses a method further comprising: switching the first icon to represent a second component model by selecting the second component model in the user interface (see "library" in page 3, col. 2, last paragraph, lines 1–3).

40. As to claim 16, AeroSim discloses a method wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model (see page 65).

41. As to claim 17, AeroSim discloses a method wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model (see "current mass of the fuel in the tank" in page 177, col. 2, line 1).

42. As to claim 18, AeroSim discloses a method wherein the user interface includes an option that provides users with multiple component models for the users to select one of the multiple component models (see page 41, 2nd paragraph).

43. As to claim 19, AeroSim discloses a method wherein component models provided as options of the user interface may be extended by users (see page 32, 1st and 2nd paragraphs).

44. As to claim 20, AeroSim discloses a method wherein after the second component is selected in the user interface, the second component model is incorporated into the model of the target system through the first icon (see page 32, 4th paragraph).

45. As to claim 21, AeroSim discloses a method wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model (see "customized" in page 26, lines 1–4).

46. As to claim 22, AeroSim discloses a method wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model (see "customized" in page 26, lines 1–4; page 35, col. 2, next to last paragraph; and "which specifies what parameters of the flight dynamics model the program will output" in page 36, col. 1, OUTPUT bullet).

47. As to claim 23, AeroSim discloses a method wherein the first icon represents one of the first component model and the second component model depending on users' selection of the first component model and the second component model (see "we will specify the aircraft parameter file" in page 32, 4^{th} paragraph).

48. As to claim 24, AeroSim discloses a method wherein the first component model is switched to the second component model without replacing the first icon by a second icon representing the second component model (see page 32, 4^{th} paragraph).

49. As to claim 38, AeroSim discloses a computer implemented system for designing a target system in which a planetary environment is one of factors for designing the target system, the system comprising: a model storage for storing and providing models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); and a design unit for designing the target system by utilizing the models provided by the model storage (see page 4, col. 2, last paragraph), wherein the model storage provides a plurality of wind turbulence models including at least a discrete wind turbulence model (see page 65).

50. As to claim 39, AeroSim discloses a system further comprising an execution unit for executing the target system designed in the design unit (see page 32, 1st and 2nd paragraphs).

51. As to claim 40, AeroSim discloses a system wherein the execution unit is realized through a process of automatic code generation from the design unit (see page 32, 2nd paragraph).

52. As to claim 41, AeroSim discloses a system wherein underlying numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models (see page 32, 4th and 5th paragraphs).

53. As to claim 54, AeroSim discloses a system wherein the models provided from the model storage are represented in symbols (see page 4, Fig. 2).

54. As to claim 55, AeroSim discloses a system wherein the symbols include blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

55. As to claim 56, AeroSim discloses a system wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users (see page 32, 4th paragraph).

56. As to claim 57, AeroSim discloses a system wherein the user interface is provided in response to users clicking each block of the target system (see page 41, 2nd paragraph).

57. As to claim 58, AeroSim discloses a system wherein the user interface provides an option to select one of the wind turbulence models from the model storage (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31, as well as page 62).

58. As to claim 59, AeroSim discloses a system wherein the wind turbulence models from the model storage are provided in the user interface in response to an action taken by users (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31).

59. As to claim 60, AeroSim discloses a computer implemented system for designing a target system in which an aerospace or aeronautic model is one of elements for designing the target system, the system comprising: a model storage for storing and providing models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); and a design unit for designing the target system by utilizing the models provided by the model storage, wherein the model storage provides a plurality of models for equations of motion (see page 4, col. 2, last paragraph), wherein the plurality of models for equations of motion include at least one model for equations of motion with simple variable mass and at least one model for equations of motion custom variable mass (see page 3, col. 2, last paragraph, lines 3–5).

60. As to claim 61, AeroSim discloses a system further comprising an execution unit for executing the target system designed in the design unit (see page 32, 1st and 2nd paragraphs).

61. As to claim 62, AeroSim discloses a system wherein the execution unit is realized through a process of automatic code generation from the design unit (see page 32, 2nd paragraph).

62. As to claim 63, AeroSim discloses a system wherein underlying numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models (see page 32, 4^{th} and 5^{th} paragraphs).

63. As to claim 64, AeroSim discloses a system wherein the models for equations of motion include models for one of three-degree-of-freedom equations of motion and six-degree-of-freedom equations of motion (see page 41, lines 1–2).

64. As to claim 65, AeroSim discloses a system wherein the plurality of models for equations of motion implement in multiple axes representations (see "EOM" in page 89, lines 7–9).

65. As to claim 66, AeroSim discloses a system wherein the plurality of models for equations of motion implement in one of body axes (see " body axes" in page 89, lines 7–9) and wind axes (see page 50).

66. As to claim 67, AeroSim discloses a system wherein the models provided from the model storage are represented in symbols (see page 4, Fig. 2).

67. As to claim 68, AeroSim discloses a system wherein the symbols include blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

68. As to claim 69, AeroSim discloses a system wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users (see page 32, 4^{th} paragraph).

69. As to claim 70, AeroSim discloses a system wherein the user interface is provided in response to users clicking each block of the target system (see page 41, 2nd paragraph).

70. As to claim 71, AeroSim discloses a system wherein the user interface provides an option to select one of the equations of motion models in the model storage (see page 41, 2nd paragraph and "equations of motion" icon in Fig. 31, as well as page 89).

71. As to claim 72, AeroSim discloses a system wherein the equations of motion models in the model storage are provided in the user interface in response to an action taken by users (see page 41, 2nd paragraph and "equations of motion" icon in Fig. 31).

72. As to claim 80, AeroSim discloses a computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of factors for designing the target system, comprising: providing wind turbulence models necessary to design the target system wherein the wind turbulence model includes at least one discrete wind turbulence model (see page 65); and incorporating the wind turbulence models to the target system (see page 4, col. 2, last paragraph).

73. As to claim 81, AeroSim discloses a medium further comprising executing behavior of the target system designed (see page 32, 1st and 2nd paragraphs).

74. As to claim 82, AeroSim discloses a medium wherein the wind turbulence models are represented by blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

75. As to claim 83, AeroSim discloses a medium wherein the step of incorporating comprises providing a graphical user interface in response to an action taken by a user (see page 32, 4th paragraph).

76. As to claim 84, AeroSim discloses a medium wherein a graphical user interface is provided in response to users clicking the blocks representing wind turbulence models (see page 41, 2nd paragraph).

77. As to claim 85, AeroSim discloses a medium wherein the graphical user interface provides an option to change a wind turbulence model to another wind turbulence model (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31).

78. As to claim 86, AeroSim discloses a medium wherein the graphical user interface provides blanks to enter parameters of the wind turbulence models to produce outputs of the wind turbulence models (see page 32, 4th paragraph).

79. As to claim 87, AeroSim discloses a computer-readable medium holding instructions executable in a computer for the design of a target system, comprising: providing equations of motion models necessary to design the target system wherein the equations of motion models include at least one of simple variable mass models and custom variable mass models (see page 3, col. 2, last paragraph, lines 3–5); and incorporating the equations of motion models into the target system (see page 4, col. 2, last paragraph).

80. As to claim 88, AeroSim discloses a medium wherein the equations of motion models include at least one of three-degree-of-freedom equations of motion models and six-degree-of-freedom equations of motion models (see page 41, lines 1–2).

81. As to claim 89, AeroSim discloses a medium further comprising executing behavior of the target system designed (see page 32, 1st and 2nd paragraphs).

82. As to claim 90, AeroSim discloses a medium wherein the equations of motion models implemented in multiple axes representations (see "EOM" in page 89, lines 7–9).

83. As to claim 91, AeroSim discloses a medium wherein the equations of motion models implemented in one of body axes (see " body axes" in page 89, lines 7–9) and wind axes (see page 50).

84. As to claim 92, AeroSim discloses a medium wherein the equations of motion models are represented by blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

85. As to claim 93, AeroSim discloses a medium wherein the step of incorporating comprises providing a graphical user interface in response to an action taken by a user (see page 32, 4th paragraph).

86. As to claim 94, AeroSim discloses a medium wherein the graphical user interface is provided in response to user's clicking the blocks representing the equations of motion models (see page 41, 2nd paragraph).

87. As to claim 95, AeroSim discloses a medium wherein the graphical user interface provides an option to change an equation of motion model to another equations of motion model (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31).

88. As to claim 96, AeroSim discloses a medium wherein the graphical user interface provides blanks to enter parameters of the equations of motion models to produce outputs of the equations of motion models (see page 32, 4th paragraph).

Claim Rejections - 35 USC § 103

89. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

90. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

91. Claims 3, 15, 25–37, 42–53, and 73–79 are rejected under 35 U.S.C. 103(a) as being unpatentable over AeroSim as applied to claims 1, 13, and 38 above, taken in view of Marc Rauw, (Rauw hereinafter), FDC 1.2 - A Simulink Toolbox for Flight Dynamics and Control Analysis.

92. As to claims 3 and 15, while AeroSim discloses modeling a target system, AeroSim fails to disclose non standard day atmosphere models.

93. Rauw discloses a method wherein the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model (see "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude" in page 24, last paragraph to page 25, last paragraph, line 2). As per "The standards MIL-HDBK-310 and MIL-STD-210C also provide consistent vertical profiles of temperature and density up to 80 km based on extremes at 5, 10, 20, 30 and 40 km. The input of the models is <u>geopotential height</u>" (see application description page 13, 2nd paragraph, lines 10–13), Examiner interprets "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the <u>geopotential altitude</u>".

94. AeroSim and Rauw are analogous art because they are both related to flight dynamics.

95. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the atmosphere model of Rauw in the method of AeroSim because Rauw develops the Flight Dynamics and Control toolbox FDC based upon Matlab and Simulink, as a graphical software environment for the design and analysis of aircraft dynamics and control systems (see page iii, lines 1–3), and as a result, Rauw reports the following improvements over his prior art, i.e. flight control systems with mechanical linkages: a full authority, fly-by-wire, digital control system, i.e. an Automatic Flight Control System (AFCS), which incorporates design-techniques and mathematical dynamic models in a user-friendly Computer Assisted Control System Design (CACSD) package (see page 11, lines 3–9).

96. As to claim 25, AeroSim discloses a computer implemented system for designing a target system in which a planetary environment is one of factors for designing the target system, the system comprising: a model storage for storing and providing models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); and a design unit for designing the target system by utilizing the models provided by the model storage (see page 4, col. 2, last paragraph). Rauw discloses model storage including at least one non-standard day atmosphere model (see "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude" in page 24, last paragraph to page 25, last paragraph, line 2). As per "The standards MIL-HDBK-310 and MIL-STD-210C also provide consistent vertical profiles of temperature and density up to 80 km based on extremes at 5, 10, 20, 30 and 40 km. The input of the models is <u>geopotential height</u>" (see application description page 13, 2nd paragraph, lines 10–13), Examiner interprets "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the <u>geopotential altitude</u>".

97. As to claim 26, AeroSim discloses a system further comprising an execution unit for executing the target system designed in the design unit (see page 32, 1st and 2nd paragraphs).

98. As to claim 27, AeroSim discloses a system wherein the execution unit is realized through a process of automatic code generation from the design unit (see page 32, 2nd paragraph).

99. As to claim 28, AeroSim discloses a system wherein underlying numerical representations of the models including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models (see page 32, 4th and 5th paragraphs).

100. As to claim 29, Rauw discloses a system wherein the non-standard day atmosphere model includes a model incorporating a non-standard day atmosphere from one of military standard specifications MIL-HDBK-310 and MIL-STD-210C (see "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude" in page 24, last paragraph to page 25, last paragraph, line 2). As per "The standards MIL-HDBK-310 and MIL-STD-210C also provide consistent vertical profiles of temperature and density up to 80 km based on extremes at 5, 10, 20, 30 and 40 km. The input of the models is geopotential height" (see application description page 13, 2nd paragraph, lines 10–13), Examiner interprets "a non standard day atmosphere model" as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude".

101. Claim 29, has been given a broad reasonable interpretation by the Examiner. The Examiner notes that the implementation disclosed in (page 24, last paragraph to page 25, last paragraph, line 2) is functionally equivalent to the results produced by the implementation expressly claimed in Applicant's dependent claim 29. Therefore, the "product" that is produced by performing the implementation disclosed in dependent claim 29 is the functional equivalent of the "product" that is produced in (page 24, last

paragraph to page 25, last paragraph, line 2). Although the "implementation" by which the end result is different, the final result for the "implementation" is identical.

102. As to claim 30, AeroSim discloses a system wherein the model storage includes standard atmosphere models (see page 3, col. 2, last line).

103. As to claim 31, AeroSim discloses a system wherein the standard atmosphere model includes a COESA atmosphere model (see page 3, col. 2, last line).

104. Claim 31, has been given a broad reasonable interpretation by the Examiner. The Examiner notes that the implementation disclosed in (page 3, col. 2, last line) is functionally equivalent to the results produced by the implementation expressly claimed in Applicant's dependent claim 31. Therefore, the "product" that is produced by performing the implementation disclosed in dependent claim 31 is the functional equivalent of the "product" that is produced in (page 3, col. 2, last line). Although the "implementation" by which the end result is different, the final result for the "implementation" is identical.

105. As to claim 32, AeroSim discloses a system wherein the models provided from the model storage are represented in symbols (see page 4, Fig. 2).

106. As to claim 33, AeroSim discloses a system wherein the symbols include blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

107. As to claim 34, AeroSim discloses a system wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users (see page 32, 4th paragraph).

108. As to claim 35, AeroSim discloses a system wherein the user interface is provided in response to users clicking each block of the target system (see page 41, 2nd paragraph).

109. As to claim 36, AeroSim discloses a system wherein the user interface provides an option to select one of the atmosphere models in the model storage (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31).

110. As to claim 37, AeroSim discloses a system wherein the atmosphere models in the model storage are provided in the user interface in response to an action taken by users (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31, as well as page 62).

111. As to claim 42, AeroSim discloses MIL-STD-8785C (see "Von Karman" in page 65, line 1). Rauw discloses a system wherein the plurality of wind turbulence model includes a model incorporating a wind turbulence model from one of military specifications MIL-HDBK-1797 (see "MIL-HDBK-1797" as "digital Dryden" in page 57, last paragraph to page 58, 1st paragraph) and MIL-STD-8785C (see "Von Karman" in page 65, line 1 and as " Dryden" in page 118, Description, lines 1–2). As per "The specifications MIL-F-8785C and MIL-STD-1797 provide atmospheric turbulence forms including Von Karman form and Dryden form, discrete wind gust form and wind shear form. The specification MIL-STD-1797 additionally provides the digital filter implementation of the Dryden turbulence components" (see application description page 14, last paragraph), Examiner interprets "MIL-F-8785C" as "atmospheric turbulence

forms including Von Karman form and Dryden form" and "MIL-HDBK-1797" as "digital filter implementation of the Dryden turbulence components".

112. As to claim 43, Rauw discloses a system wherein the plurality of wind turbulence models includes wind turbulence models that are continuous in altitude (see " A major drawback of the Von Karman spectral densities is that they are not rational functions of Ω. For this reason the following power spectral density model is often used for flight simulation, i.e. Dryden spectra" in page 32, 3rd to 2nd paragraphs from the bottom).

113. As to claim 44, Rauw discloses a system wherein the plurality of wind turbulence models includes wind turbulence models at altitudes within multiple transition regions between the multiple regions for wind turbulence models (see "regions" as "steady and non-steady atmospheres" in page 235 to page 237, 1st paragraph).

114. As to claim 45, Rauw discloses a system wherein the plurality of wind turbulence models includes a wind turbulence model at an altitude in a transition region between first and second regions (see "first region" as flight, "transition" as "approach", and "second region" as "landing" in page 235, lines 1–10).

115. As to claim 46, Rauw discloses a system wherein the wind turbulence models in the first and second regions being defined in military specifications (see "military specifications" as "digital Dryden" in page 57, last paragraph to page 58, 1st paragraph, "Von Karman" in page 65, line 1 and as " Dryden" in page 118, Description, lines 1–2). As per "The specifications MIL-F-8785C and MIL-STD-1797 provide atmospheric turbulence forms including Von Karman form and Dryden form, discrete wind gust form and wind shear form. The specification MIL-STD-1797 additionally provides the digital

filter implementation of the Dryden turbulence components" (see application description page 14, last paragraph), Examiner interprets "MIL-F-8785C" as "atmospheric turbulence forms including Von Karman form and Dryden form" and "MIL-HDBK-1797" as "digital filter implementation of the Dryden turbulence components".

116. As to claim 47, Rauw discloses a system wherein the wind turbulence models within a plurality of transition regions generate values of the wind turbulence model by transition methods between the multiple regions for wind turbulence (see page 236, 3rd paragraph from the bottom, lines 2–7).

117. As to claim 48, Rauw discloses a system wherein the transition method of the wind turbulence model within a single transition region may contain a plurality of transition methods (see page 236, 3rd paragraph from the bottom, lines 2–7).

118. As to claim 49, Rauw discloses a system wherein the plurality of transition methods may overlap (see page 236, 3rd paragraph from the bottom, lines 2–7).

119. As to claim 50, AeroSim discloses a system wherein the wind turbulence model in the transition region generates values of the wind turbulence model by linearly interpolating between values of wind turbulence models between the plurality of transition regions (see page 63, col. 1, last paragraph).

120. As to claim 51, Rauw discloses a system wherein the wind turbulence model transforms coordinates of the wind turbulence model in a plurality of regions to a common coordinate system (see page 233, Section B2.2).

121. As to claim 52, Rauw discloses a system wherein the common coordinate systems is the coordinates of the wind turbulence model in one of the plurality of regions (see page 237, Section B.5).

122. As to claim 53, Rauw discloses a system wherein the wind turbulence model transforms coordinates of the wind turbulence model in the first region to coordinates of the wind turbulence model in the second region (see page 237, Section B.5).

123. As to claim 73, AeroSim discloses a computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of factors for designing the target system, comprising: providing atmosphere models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3); and incorporating the atmosphere models to the target system (see page 4, col. 2, last paragraph). Rauw discloses the atmosphere models including non-standard day atmospheric models (see “a non standard day atmosphere model” as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude" in page 24, last paragraph to page 25, last paragraph, line 2). As per “The standards MIL-HDBK-310 and MIL-STD-210C also provide consistent vertical profiles of temperature and density up to 80 km based on extremes at 5, 10, 20, 30 and 40 km. The input of the models is geopotential height” (see application description page 13, 2nd paragraph, lines 10–13), Examiner interprets “a non standard day atmosphere model” as a model in which "the geometrical altitude h in this equation must be replaced by the geopotential altitude".

124. As to claim 74, AeroSim discloses a medium further comprising executing behavior of the target system designed (see page 32, 1st and 2nd paragraphs).

125. As to claim 75, AeroSim discloses a medium wherein the atmosphere models are represented by blocks (see " blocks" in page 3, col. 2, last paragraph, lines 1–3).

126. As to claim 76, AeroSim discloses a medium wherein the step of incorporating comprises providing a graphical user interface in response to an action taken by a user (see page 32, 4th paragraph).

127. As to claim 77, AeroSim discloses a medium wherein the graphical user interface is provided in response to users clicking the blocks representing atmospheric models (see page 41, 2nd paragraph).

128. As to claim 78, AeroSim discloses a medium wherein the graphical user interface provides an option to change an atmosphere model to another atmosphere model (see page 41, 2nd paragraph and "atmosphere" icon in Fig. 31).

129. As to claim 79, AeroSim discloses a medium wherein the user interface provides blanks to enter parameters of the atmosphere models to produce outputs of the atmosphere models (see page 32, 4th paragraph).

Conclusion

130. Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

131. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan C. Ochoa whose telephone number is (571) 272-2625. The examiner can normally be reached on 7:30AM - 4:00 PM.

132. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

133. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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